PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
PD53450PC00/CA		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/SE02/00443	11.03.2002	13.03.2001
International Patent Classification (IPC) or national classification and IPC7		
C07J 1/00, C07J 5/00, A61K 31/568, A61K 31/57, A61P 35/00		
Applicant		
Hagström Tomas		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 8 sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☒ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
18.09.2002	11.06.2003
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Telex 17978 PATOREG-S Facsimile No. 08-667 72 88	Authorized officer Anna Sjölund/BS Telephone No. 08-782 25 00

Form PCT/IPEA/409 (cover sheet) (January 1998)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/SE02/00443

I. Basis of the report

1. With regard to the **elements** of the international application:*

☒ the international application as originally filed

☐ the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement) under article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheet/fig _____

5. ☒ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.*

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 7 partly, 13-16 partly, 17-27

because:

☐ the said international application, or the said claims Nos. _____
relate to the following subject matter which does not require an international preliminary examination *(specify)*:

☒ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. *
are so unclear that no meaningful opinion could be formed *(specify)*:

* 7,13-16 partly

The applicant´s attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT).

.../...

☐ the claims, or said claims Nos. _____ are so inadequately supported
by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. 17-27

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box III.2

Present claims 7, 13-16 relate to the use of steroid derivatives where the effect is defined by reference to a desirable characteristic, namely capability of interrupting disturbances in Wnt-signalling. The claims cover all compounds having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and / or disclosure within the meaning of Article 5 PCT for only a very limited number of such compounds. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the compound by reference to a result to be achieved.

Moreover, present claims 7, 13-16 relate to an extremely large number of possible compounds. Support within the meaning of Article 6 PCT and / or disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds claimed.

The search was performed on those parts relating to the compounds mentioned in the description and compounds covered by claims 1-6.

Accordingly, this opinion is based upon the matters having been searched, namely claims 1-6, 7 partly, 13-16 partly and 8-12.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-6,8-12	YES
	Claims	7,13-16	NO
Inventive step (IS)	Claims		YES
	Claims	1-16	NO
Industrial applicability (IA)	Claims	1-16	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Box V.2.
Cited documents:

D1. US5912240 A1

This opinion is based upon the subject matters of the claims having been searched, (PCT Rule 66.1(e))
The search was performed on those parts relating to the compounds mentioned in the description and compounds covered by claims 1-6.
Accordingly, this opinion is based upon the matters having been searched, namely claims 1-6, 7 partly, 13-16 partly and 8-12.

Novelty.

D1 discloses 5-androstene-derivatives with tumour-inhibitory effects.
In column 4, lines 14-17, it is described how αAED (5-androstene 3β,17α-diol) significantly inhibits the growth of ZR-75-1 cells (human breast cell cancer cell lines).

Claims 7,13-16 are therefore not considered to fulfil the requirements of novelty.

The applicant's attention is drawn to the fact that the mere explanation of an effect obtained when using a known compound in a known process, even if the explanation relates to a pharmaceutical effect which was not known for that compound, cannot confer novelty to said process. In the present case, the newly discovered technical effect of treating tumours does

.../...

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box V

not confer novelty on the claims directed to medicaments capable of interrupting disturbances in Wnt-signalling, in particular corresponding to 5-androstene/androstane, 5-pregnelonone/pregnane-derivatives for treating tumours. No novelty exists, if the claim is directed to the use of a known compound for a known purpose, even if a newly discovered technical effect (interrupting Wnt-signalling) underlying said known use is indicated in that claim.

The attention of the applicant is also drawn to the fact that, although the influence of a compound in interrupting disturbances in Wnt-signalling is indisputably a pharmacological effect, it cannot itself be considered a therapeutic application. There are an undefined number of diseases which might be related to this pharmacological effect. In other terms, it still needs to find a practical application in the form of a defined treatment of a specified pathological condition, this being an essential technical feature, in order to render claims 7,13-16 clear.

Inventive step, claims 1-6, 8-12.

D1 discloses structurally very similar compounds, 5-androstene-derivatives, with tumour-inhibitory effect, see the above cited example.

The only difference is the substitution in position 7 for the androstene-compounds.
This structural difference is minimal and cannot be considered as involving an inventive step, since the person, skilled in the art, faced with the problem of providing novel compounds for treating/preventing benign/malignant tumours, would regard it as a logical alternative design possibility and would not be surprised by the retention of the known properties.
An inventive step could therefore only be acknowledged, if the problem to be solved was the provision of new derivatives having superior or surprising properties compared to the structurally closest compounds known from D1.

.../....

Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Box V

It is true that the experiment in D1 only was done in vitro, but it is considered that with a proven effect of test result in vitro, this would lead a person skilled in the art to a reasonable expectation of success concerning the effect in vivo.

It is reminded that the breadth of the claims should be such that it represents a reasonable generalisation over the examples provided, and such that it is credible that every compound falling within its scope actually provides a solution to the problem underlying the invention.

In the absence of an unexpected effect, inventive step is considered to be lacking.

Claims 1-6,8-12 are therefore not considered to fulfil the requirements of inventive step.

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The subject matter of the amended claim 7 goes beyond the content of the application as originally filed (Article 34.2 b) PCT). The expressions "5-androsten-" and "androstane" have been changed to 5-androstenol and "androstanol". These expressions cannot be found in the originally filed documents. Accordingly the amendments will not be considered and the present report is established upon the claims as originally filed (Rule 70.2 c) PCT).

The definition of the compounds in claim 7 is not in accordance with PCT Article 6. The expression "5-androstene-" is not clear and concise as it is not clear if it means 5-androsten(e)olone or only 5-androstene- (derivatives).